Expeditionary Biological Detection (EBD) Advanced Technology Demonstration (ATD)

The Expeditionary Biological Detection (EBD) Advanced Technology Demonstration (ATD) is designed to further develop efficient, man-portable biological detection systems for use in the field by the U.S. Marine Corps. This Defense Threat Reduction Agency (DTRA) program supports the Joint Biological Tactical Detection System (JBTDS) program and its acquisition strategy for increased identification of biological threats on the battlefield. The JBTDS will consist of some of the same systems demonstrated in the EBD ATD, as well as new potentially aviable sytems that were not deemed technically mature enough at the beginning of this ATD.

The systems currently in use by the military are large, heavy, power-intensive and expensive to procure and support. The Marine Corps is seeking a more flexible, mobile system that can be rapidly deployed, used and sustained by ground forces in all types of operational environments.

The EBD capability would be used to notify and protect downwind forces from being exposed to biological agents. Early warning and identification will significantly reduce casualties by minimizing the medical response time between recognition of exposure to a biological agent and treatment. The new systems are able to analyze the hazard within 40 minutes or less; several can perform a non-specific analysis in less than one minute.

The EBD ATD is assessing six separate aerosol detector technologies whose development has been funded by industry, government and government-industry partnerships. Each system is capable of continuous automated operation for at least 8 hours on a single military standard battery and weighs less than 37 pounds. If developed and integrated in concert, they would provide the capability to discriminate between biological and non-biological particles; classify the biological particles as a spore, toxin, vegetative bacteria, or virus; and then identify up to eight known biological pathogens. These technologies include biological/non-biological discriminators, a classifier and an identifier.

The EBD ATD is also assessing five separate aerosol samplers, including dry samplers and wetwall samplers, to reduce sample inaccuracy and collection and analysis time. Wet-wall samplers tend to be more sensitive and provide a ready-made, wet sample for follow-on analysis; dry samplers require a user to manually extract the sample into a liquid solution prior to analysis.

The EBD ATD began in October 2006 and is scheduled to end in March 2008. DTRA is developing the $15.8 million program in conjunction with the U.S. Marine Corps.

Defense Threat Reduction Agency

DTRA safeguards America and its allies from weapons of mass destruction (chemical, biological, radiological, nuclear, and high yield explosives) by providing capabilities to reduce,

eliminate, and counter the threat, and mitigate its effects. This Department of Defense combat support agency is located at Fort Belvoir, Va., and operates field offices worldwide.

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